

## E-learning in a Nigerian Open University

**Babatunde Ipaye**

National Open University of Nigeria

[bipaye@gmail.com](mailto:bipaye@gmail.com)

### **Abstract**

The issue of e-learning in developing nations is beset with paradoxes. First- developing nations want to move with the trends in the provision of open and distance learning hence they are interested in e-learning. The use of e-learning however has its own challenges in terms of infrastructural provisions in form of electricity, broadband, computers and inter-connectivity. There are also the challenges of availability of personnel, the capacity and expertise in on-line teaching and tutoring, attitudinal dispositions of stake holders like students, tutors and even institutional providers themselves. These challenges facing e-learning in developing countries are ongoing and require the attention of all stakeholders. This paper, based on the development of e-learning in the only open university in Nigeria, discusses the process of establishing one, trying to situate it within the challenges mentioned above.

### **Introduction:**

The emergence and proliferation of new information and communication technologies (ICT), had introduced an unstoppable revolution into education particularly in the areas of teaching and learning. The Internet and the web have further raised the revolutionary tempo especially through the enhancement of e-learning. For most open and distance learning providers, e-learning had added another dimension to the issue of access. While open and distance learning, ODL, itself is hailed by nations as bailing them out of the problem of providing access to education to the masses, e-learning is further extending the frontiers by further removing distance from education and helping individuals who can, to access education any where, any time, at their own pace and at any place. E-Learning or On-line education offers students excellent opportunities for individual communication with their study materials, study resources, and their tutors. With the asynchronous nature of on-line learning, learners can be in contact with their tutors and study materials and even colleagues on a 24/7 throughout the year. For the purpose of this paper, we would want to adopt Keegan's rather old but simple definition of on-line education which he said is "characterized by: the separation of teachers and learners which distinguishes it from face-to-face education, the influence of an educational organization which distinguishes it from self-study and private tutoring, the use of a computer network to present or distribute some educational content, the provision of two-way communication via a computer network so that students may benefit from communication with each other, teachers, and staff" (Keegan, 1988), linking it with the description of e-learning which Kaplan-Leiserson (2003) said, "... covers a wide set of applications and processes, such as Web-based learning, computer-based learning, virtual classrooms, and digital collaboration. It includes the delivery of content via Internet, intranet/extranet (LAN/WAN), audio and videotape, satellite broadcast, interactive TV, and CD-ROM" (Kaplan-Leiserson, 2003) It is important to bear this in mind because at the National Open University of Nigeria, e-learning activities started with the most basic, the use of audio tapes and progressed to the use of CD-ROM, interactive video and now, the university has a most standard e-learning laboratory using one of the best Learning Management Systems, LMS, available.

## ***E-Learning at the National Open University of Nigeria***

The National Open University of Nigeria, NOUN, sprang from the ashes of the defunct National Open University, which was abruptly closed down by a military government in April 1984, barely one year after its establishment. In the year 2000, after an international workshop co-hosted by the Commonwealth of Learning, COL, and the Nigerian Federal Government, the years 2001 – 2010 were declared a decade of open and distance learning in Nigeria.. Thereafter, a time-line was drawn for series of activities and implementation strategies. One of such strategies was the resuscitation of the defunct open university which now had to be re-named National Open University of Nigeria (NOUN). It was clear in the mind of the planners right from the beginning that e-learning or on-line learning would play a major role in the teaching and learning delivery system of the university. The following gives a step-by-step description of the e-learning activities of the university

### **Objectives:**

The main objective of the NOUN e-learning efforts is to encourage staff and students of the university to adopt an innovatory approach to educational provisions and instructional deliveries and imbibe the culture of using technologies to support such provision and deliveries.

### **Specific objectives:**

Some of the specific objectives are:

- 1) to sensitize staff and students of the university towards the use of *e-learning tools*
- 2) to develop capacity in e-learning and provide leadership in this aspect of ICT utilisation in Nigeria and within the West African sub-region
- 3) to raise general awareness of the academic community of e-learning tools
- 4) to provide systemic and continuous support for staff and students in the use of e-learning
- 5) to initiate a culture of innovation which will lead to experimentation in educational provisions
- 6) to include e-learning in the portfolio of teaching and learning tools at NOUN
- 7) to establish and disseminate good practice in this area of teaching and learning in Nigeria and within the West African sub-region
- 8) to provide, as part of the university's strategic plan, a sound infrastructure for the development and delivery of e-learning tools and services

We now describe in a systematic manner the various steps taken in establishing the e-learning tools and services in NOUN. In doing so, we shall be taking cues from the DEC guidelines for online programmes in distance education\*.

## **1. ORGANIZATIONAL STRUCTURE**

In organizing an e-learning and on-line programmes, the National Open University of Nigeria followed strictly the 'Blue-Print' prepared for the university in 2002. The technology aspect of the blue print provided for two Directorates in the area of Technology viz the Directorate of ITSS and that of CNSS. While the former is charged with issues relating to hardware, the latter takes care of networking and software issues. This arrangement thus ensures that there are persons in charge of the university's on-line programmes to coordinate both the programmes and the human resources needed for the smooth operation of the programmes and the integration of the technology infrastructure. The two Directorates in-between them also provide technical persons to administer the technology as well as the LMS to be deployed and provide instructional design

support on the LMS. Further, the university's intention was to adopt a tripartite approach as she launches her on-line programmes. First is an in-house development of the e-learning and on-line programmes hence the staffing of the two Directorates ensured that there were staff recruited to develop e-content. These staff were trained to acquire the needed capacity and especially refocused on the in-house style of the university in the development of e-content. The second plan is to out-source part of the LMS development including the relevant e-content. This is because in ODL, teamwork is the predominant approach. Further, such out-sourcing may also help to improve quality assurance when inter-mixed with the in-house development. The university's iLMS is currently under development by experts to whom it is outsourced. It is going to be a truly African product with the tidbits of cultural influences on learning not included in commercial LMS available on the market. The staff of the two Directorates, as well as other academic staff of the university, the course material designers, and other relevant staff, are already liaising with the agency on regular basis to ensure a quality product. In developing her own iLMS through some notable experts, the university had suggested that the experts bear in mind the need to be as eclectic as possible so that in terms of technology to support both asynchronous and synchronous instruction, the consultants should try every imaginable and available tool (websites, wikis, blogs, Second Life, e-mail, Twitter, course management systems, video/audio podcasts, Facebook, threaded discussion lists, video/audio/text chat, video conferencing software, and lots more). Eclecticism here means that even the old and conventional practices are not discarded in the development of e-learning platforms in developing nations. The NOUN iLMS is to be designed to accommodate a platform like a graphical MOO, which contains a text chat pane on the left and a display pane on the right in which the facilitator can show just about anything online -- webpages, presentation slides, graphics, video etc. It has been argued that a social network tool like the "Facebook really is nearly ubiquitous in our current information environment. Any willing person really can use it, if they know of a purpose, see value, and are informed about their privacy options, and students use the facebook to learn, create learning circles and community of scholars without any costs implication for the university. It has also been found that most students spend long hours with the face book, and, if providers can integrate its use in instructional delivery, students may gain more and become more motivated in their learning. In fact, the university's iLMS was presented and test-run early December 2009. The third was to adopt some of the existing LMS, looking for those that are actually robust enough in terms of fulfilling all the criteria of a quality LMS. The last stage of organization here is the Help Desk. The university has a well developed and well staffed help desk, visitors' information and call centre, VICC, which services both off-line and on-line activities. It is planned to be a 24X7 Centre, with adequately trained staff for chat services for all categories of enquirers. With our ever growing student population majority of whom are still grappling and struggling to become computer literate, the VICC will fill the gap of tutoring students on the correct and appropriate use of and interaction with the iLMS. This is a major support service to all students as NOUN launches her iLMS. More on support services later.

## PLANNING AND DEVELOPMENT OF ACADEMIC PROGRAMMES – COURSEWARE

Planning a suitable online courseware format

Selection of appropriate authoring tools and relevant hardware (Server, LMS platform, etc.);

The online programme should emanate from/ or at least be a part of the perspective plan;

Development of online programmes should go through three stages namely: Programme formulation, Instructional Design and Development of courseware, which is as follows:

The NOUN on-line programme is an integral part of the perspective plan of the university to develop a sound e-learning environment. It cannot be denied that e-learning is a dynamic effort and changes could come up at any stage of the development or even at the course of implantation and running. NOUN had thus planned for an up-to-date courseware format, while bearing in

mind the most appropriate authoring tools and most usable LMS platform. The A-Tutor is the currently most patronized by the university though attempts had been made to also introduce the MOODLE and as noted earlier the university is developing an in-house LMS known as iLMS. The following were the stages of concern to the university and due attention was paid to these during the development:

#### Programme formulation:

**Need Assessment:** As a new university, it was not difficult doing the needs assessment. The university needs every aspect of the e-learning environment that will make the programme succeed

**Defining Target Groups:** The target group consists of all the students, the staff and of course the prospective students of the university. Knowing that this is going to be the first open university in the West African sub-region, a broad target group became mandatory. Further, bearing in mind that the open university's main aim is to provide access to virtually anybody who knocks at her doors thirsty of education, the university prepared for almost all levels of programmes beginning from certificate programmes, diploma, first degree and postgraduate programmes. This is not an easy thing to do in starting or creating an e-learning environment. To give it a distinct identification, the NOUN house-style was developed and adopted and all concerned were trained in the NOUN house-style. To test run the whole thing, the university decided to use first the A-Tutor with the hope of adding other viable and culturally robust LMS later, with the iLMS becoming a default platform.

#### Instructional Design:

The structure was formulated to be eclectic and this makes it easy to adopt a media-mix by which text, audio, video, multimodal, approaches have to be used. Course outlines were now developed for each course unit based on appropriate course delivery planned for the level/course. A carefully thought-out assessment procedure was in-built, taking into consideration the facilities available for such and other delivery strategies in the A-Tutor, and especially the iLMS to be used.

#### **Courseware Development:**

The university was particularly lucky in that she inherited a group of professional staff who had been charged with responsibilities of developing media-based materials for teaching and learning before the establishment of the open university. These staff were carefully screened and those with relevant skills were further trained to both take care and supervise others in the areas of Content Development, Content Editing, Format Editing, Language Editing, Development of Graphics, Illustrations, Animations, etc. These category of staff were also very helpful at the stage of finalising the E-content though other staff from the ICT directorates have to join at this stage too. Of course the ICT staff were responsible for uploading courseware on the LMS, and for pre-view and testing of access. The two directorates are also charged with responsibilities for periodic assessment of the entire programme to ensure constant revisions and material updating. In all, there was emphasis and focus on ensuring that the course content was appropriately pitched and the iLMS is culturally compliant.

Courseware developed were in self-learning format, having adequate hyperlinks pointing to relevant resources and as pointed out earlier, they were also in the form of a media mix comprising of text, audio, video animations, etc. Production of courseware was done both

in-house while a few were out-sourced. With the assistance of a Canadian university many of the staff of the university were trained in developing e-content and those with advanced knowledge were charged with duties of continuous training of the staff since many of the university staff were new to both open-university system and the e-learning environment. The various entry and exit points approved by the university Senate were used as guides for example in defining the study input for each programme in terms of credit loadings etc.(see Table 1)

Table 1: Norms for offering programmes through distance mode at the National Open University of Nigeria based on credit system

Level of Programme	No of Credits	Duration
Certificate ; Proficiency	18	6 months
Diploma	60	2/4years
Access	30	9 months
First Degree (Bachelors)	120	4 /8years
Bachelors (Direct Entry)	90	3/6 years
Postgraduate Diploma	36	9 months
MBA/MPA	45	18/36 months
MA/M.Sc	36/42	12/18months (24/36 months)
Ph. D	60 90	2 /4years 3/6years

In approving the credit loading, the Senate was very much conscious of having to ensure parity with the conventional universities since the issue of quality and societal acceptance comes in here. Further, learning from experiences in the area of study material production and distribution, the university ensured that Courseware was uploaded before the launch of programme and as soon as the launching was done, the Courseware had been available at all times for the students to access and use.(see able 2)

Table 2: Overall breakdown of Course materials Printed on CD and on the Web

S/N	Schools	Printed		CD's		WEB		Braille	
		*	**	*	**	*	**	*	**
1	SASS	175	177	73	77	160	164	29	29

2	SST	131	134	57	65	155	123	3	3
3	SBHRM	97	97	76	79	117	120	1	1
4	SLAW	24	24	13	13	27	27	-	-
5	SED	86	86	22	23	73	74	25	25
Total	5	513	518	241	257	492	508	61	61

Additional 5 in print, 16 in CDs and 16 on Web.

Overall summary of table (ii) above indicate that:

(i) 518 course materials are in print.

(ii) 257 course materials are on CDs.

(iii) 508 course materials are on the Web.

(iv) 61 course materials have been brailed.

### 3. DESIGN OF E-CONTENT

The design of the e-content was done in two ways. Some aspects were outsourced while others were developed internally by the university staff. E-content, as noted earlier, was mainly in the form of text, audio, video and animation. The number of credits was determined on basis of the outline and as approved by Senate. Provisions were made for interactions, chats, assessment and evaluation, and also online counseling. Each aspect of the content was based on principles of self learning.

### 4. STUDENT ADMISSION

To ensure success in the operation of the e-learning environment, the university decided to link the university –wide online admission processes to the e-learning platform. On-line admissions, registration, e-payment and all related matters were out-sourced to the E-transzact. Each student was provided a wallet into which all payments are made. There are various sub-heads in the wallet depicting the particular thing for which payment was made. This was made to be as user-friendly as possible and every student and prospective applicant can easily go in to apply and make needed payments. As soon as payments were made, receipts were immediately generated and codes assigned for future use by the student. As soon as a wallet is created/opened the student is assigned a pass-word which enables him/her to access the wallet in subsequent transactions and no one else can gain access to the wallet.

### 5. LEARNER SUPPORT SERVICES

The National Open University of Nigeria places much emphasis on learner support services and she has one of the most robust learner support for off-line students. In developing the e-learning environment, the university is aware that on-line students could even be more isolated and more bored learning on their own than off-line students. For this reason, a well-designed learner support was integrated into the on-line provisions. To adequately cater for interactivity and constant interaction, there are provisions for online chat rooms, e-mail facility, bulletin boards, video conferencing etc. accessible to both academic and non-teaching staff, registered and prospective students. As noted earlier, one of the first things provided is a Help Desk called the visitor information and call centre, VICC. This centre provides services to prospective students, the larger public and even staff in the areas of both academic and administrative support services to all. The centre, fully staffed with well-trained staff, provides information as well as referral to all callers. It should be re-emphasised here, however, that apart from instructional facilitators, every study centre has at least one student counsellor who provides services such as dissemination of information, self study tips, assistance with development of study skills and

habits, helping students to handle their assignments especially TMAs, helping with orientation, registration and course management strategies, counseling and tutoring services, vocational guidance etc. In addition, the study centres also provide multimedia support, library services both mortar and brick libraries as well as digital libraries for which each registered student is given an access code, evaluation of assignments, feedback, guidance of project work, organisation of seminars and conduct of paper and pencil as well as online examinations and other related services. The VICC as an arm of the learner support services, also provides information and referrals to all categories of callers. Such referrals could be for counseling, further information, or to other units and departments of the university which could provide the necessary help to the caller. To further help the work of the VICC and the learner support directorate, information on available support services are usually prominently displayed on the web for users to see and these are occasionally flashed to call attention of users to such available services.

Student counselors at the study centres, a number of instructional facilitators, technical staff at the ICT directorates and other staff are trained to handle chat and discussion forum online as well as to maintain, in a most confidential manner, online records pertaining to:

- Tutor- Counselors and Staff
- Students Registered
- Counseling Sessions
- Assignments Received, Evaluated and Returned
- Student Queries
- Administration and Finance
- Student feedback about the course, delivery, counselor/teacher, facilities, environments, etc.

Learner support services directorate as well as the VICC have their servicom charter, which provides a time frame policy for replying to the students' and other callers' queries within the stipulated time. Further, as part of learner support, the university had introduced on-line periodic webinars on contemporary or significant topics and self-help topics that are geared to helping on-line students on guides and strategies for learning, time management, preparing term papers, handling of TMAs etc. and, from time to time, information about such webinars are displayed on the website and e-mailed to all the concerned instructional facilitators, academic staff and students.

Though online support services are at their infancy in the university, significant progress had been made in the development of such services and it is hoped that all concerned will keep taking advantage of these services.

## 6. LEARNER ASSESSMENT AND EVALUATION

University examinations form part of the quality assurance of any given university in Nigeria both conventional and open university. In fact NOUN appreciates the fact that the sanctity of her examinations, the quality of the examinations, the organization and efforts made to ensure that leakages, mis-conduct etc are prevented will form part of the yard stick by society in accepting her programmes and certificates. The university thus creates a directorate of examination and assessment, DEA. First, the university Senate emphasises the use of TMAs as a form of formative assessment, providing regular feedback to each student through tutor comments on the TMAs submitted, thus helping the student to gauge his/her performance and progress in the courses registered for. Senate also directed that in addition to the TMAs, Formative assessment should be through online computer marked assignments. Individual and group projects, discussion forum, and webinars are clearly linked to the objectives and desired competencies / skills or expected learning outcomes of each course. Senate also directed that the turn-around

time for providing feedback on performance to the learners should not exceed two weeks and definitely before the end-of-semester examination commences. Formative assessment for all on-line courses should also be on-line. Senate also rules that this form of assessment should contribute 30% weightage in the overall assessment. Summative assessment is usually in form of end-of-semester examination which are usually conducted online in a proctored system. The university currently experiments with and uses MAPLES T.A for the e-examination. Staff of the university are studying and critiquing the software and had been identifying areas that need improvements to accommodate issues like setting and marking essay tests, providing for systematic coverage of the taxonomic spread and immediate generation of transcript. The MAPLE T.A is quite user friendly and examinees have no difficulties interacting with the platform. In a similar manner, the assessment aspect of the iLMS, the university in-house platform, is as friendly as MAPLE T.A. The iLMS too is grappling with the issue of assessing essay questions in addition to the other formats. It can however unlike the MAPLE T.A. immediately handle issuance of transcripts, provide for acceptance and processing of credits transfers and automatically merge TMA scores with end-of semester exam scores.

## 7. TECHNOLOGY INFRASTRUCTURE AND USE.

The NOUN web site, [www.nou.edu.ng](http://www.nou.edu.ng), has become very familiar to all students including prospective students and the larger public. The website contains all the relevant information, about various courses, fee structure, rules, examination schedules and time-table, etc. Information had been provided for all prospective users about the technical requirements to join NOUN's online programme; and a reliable access to a LMS had been installed on the NOUN server. Every registered student is assigned an e-mail account and the mobile phone number of every student is available for mass SMS text messages. An in-built regular orientation, registration and examination registration procedure is available. A "Help" system is available, to help all users of the platform to become more familiar with technology use and any changes in the environment.

### **How far and how well?**

The e-learning attempt by the National Open University of Nigeria is new to all stake-holders concerned – students and staff alike. Given the age of the university, we cannot yet boast of grandiose success. There is need however for us to take an in-depth look at the attempt to date and tease out what lessons had been learnt so far and what the prospects are likely to be. The university had graduated only one set of post graduate Diploma students. We cannot honestly say that any student has graduated using full e-learning methodologies. However it may be safe to state that in NOUN, a blended approach is being implemented whereby print materials are made available to learners supported with materials burnt on CD-ROMS as well as placed online, probably with a 60% - 40 % ratio (see table 2). In that sense we can say the students that have graduated used some form of e-learning in their studies. Those students who had graduated however were not exposed to the iLMS which is original to the university and which is recently been gradually introduced.

### **Lessons learned:**

The practical reality on the ground is that NOUN is applying e-learning as a new delivery method in an academic culture that is predominantly used to a face to face course delivery. The university had also gone ahead to develop an 'indigenous', home-grown platform which incorporates a judicious mix of technology, content, media, graphics and delivery, one that factors in cultural, socio-emotive, cognitive and even digital divides, since the university is quite conscious of the wide age gap differences, (16 – 75) of her students. This gap as is well known,



“encompasses such disparate groups as the unemployed, returning to work, new starters, over 55's - the 'lost generation' who have typically missed out on training and *educational* opportunities and will benefit greatly from a raised awareness of IT and new computer skills which will raise confidence for re-entry to the workplace and *a drop-in back into education*” (Walker, 2003) (italics mine)

In her attempt to make the programme fly, the university -planned and effected a staged roll-out, provided awareness at each opportunity at the various quarterly forums with students and course facilitators, at Faculty Boards, and in Senate meetings, and then, had intensified capacity building and in-house training for all staff. This step led to huge creation of interest in the e-learning efforts of the university and the lesson learned here should not be lost on the university, i.e. create internal awareness for your new programmes and train staff to use them. Talking specifically of the iLMS just been introduced, the following are obvious things learned.

It integrates school management with the Learning management system (LMS) which is not found in other systems; we learn from here that it is more beneficial so to do. Further, it has full support for equations and symbols, this is not too common and the workability in this regard had taught its own lesson. Further still, it has an easy content authoring interface which integrates easily with already prepared materials in MS Word or other word processing tools. It avoids scripting, a process which faculty members had found very tedious and time consuming especially using MAPLE T.A.. Simplicity is thus a lesson learned here. The iLMS enhanced interactivity available in chats, forums and local mails, thus adding another dimension to collaborative learning. Also, it presents a school management system where learners are advised on course requirements at each level and also tracks the academic record of a student. Here, we learned that it could be advantageous to develop globally and yet think globally. Finally, it is learned that if and when an institution has a leadership that is technologically aware, ICT-conscious and keeps abreast changing environment in his or her field, all other impediments to being on the frontline of technology could be overcome.

Having said all these, there are still vast areas for improvement. There is need to improve the aesthetics of the software generally. Also, the iLMS is massive, a student can easily get lost, and in fact facilitators too may require frequent training and retraining. Further, it has been observed that “end users become impatient with plug-ins, which are often rather unwieldy and take considerable time to download” - especially when this is linked on to a slow server and a non-robust band-width. For the iLMS, it takes such a long time for the web pages to display, and this issue needs serious attention. Another disadvantage is that It is clear that the university needs to commit huge investment in training the users. It could also not be denied that with a proportionate number of our students been over 55, elements of culture shock will continue to manifest until they are all ‘domesticated’ into the computer environment. Finally, there is still a perceived lack of balance between the ‘push’ and the ‘pull’, with the tilt in favour of the push so far. And, as Walker, (2003) put it, “With student centered learning designed for and from the users' perspective, there should be a balance of content 'pushed' to students associated with a 'pull' or demand for content”. Students’ awareness has to increase tremendously, Study Centres have to be adequately equipped with internet-ready computers and the band-width issue has to be tackled head-on if this balance is to be achieved soonest possible.

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